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RE: Network Access Consultation July 2018: Getting more out of our electricity networks by reforming access and forward-looking charging arrangements

Dear Jon,

Please find enclosed Electron's response to the industry consultation on network access and forward-looking charging arrangements.

We look forward to the publication of responses and our continued engagement in the process.

Kind regards,

Jon Ferris
Strategy Director

Opening Response Summary

- Our vision of the future energy sector is one in which:
 - consumers become much more engaged as new technologies such as batteries, PV and EVs become more common place;
 - distributed assets, owned by these consumers and others, are able to participate and play their full role in balancing the grid, providing a service both locally and nationally at the same time, and are treated equally amongst any other service providers; and
 - the actions of distributed assets are considered in terms of “whole system value” delivered (vs exclusive, bilateral trading arrangements) in order to deliver a more cost-efficient energy system for all consumers, regardless of the assets they own.
- To facilitate the adoption and integration of these distributed assets, two things are needed:
 - a register of assets which links owners to the assets and devices; and,
 - a market system that allows 100,000s of distributed assets and devices to play their full role in balancing the grid, thereby reducing consumer bills.
- The advent of blockchain technology presents an opportunity to create shared market platforms, and provides the necessary incentives and assurances required for market adoption.
- A solution to the challenge of asset coordination and price transparency is a system of permissioned blockchains and using a common platform. Such a system can:
 - associate ownership, attributes, and authorizations to energy assets (DSR, EVs, storage etc);
 - integrate this with a trading platform capable of matching buyers and sellers directly; and,
 - provide the basis for trustless collaboration.
- A trading platform with a whole system approach to flexibility, where flexible assets can trade across every level of the market, revenue stacking across multiple products or buyers in the same time frame. To do this, a platform needs to enable:
 - i) **A two-sided market (versus one-side market)** – a multitude of flexible asset owners/traders can trade flexibility with multiple buyers, i.e. ESO (e.g. for system balancing), DSO (e.g. to mitigate a location specific constraint), retailer (e.g. for an imbalance position) or another asset owner (e.g. secondary trading of capacity obligations). This is advantageous as it improves on an existing, and potential future, marketplace where an SO (either ESO or DSO) is the sole, or predominant, procurer. This has wider benefits when co-ordinated in collaborative trading (see below)

- ii) **Multi-lateral (versus bilateral trading)** – the majority of ancillary services and flexibility platforms being proposed, match trades on a bilateral basis. However, multilateral trading of flexibility enables buyers or sellers to stack together to share costs or combine actions e.g. frequency response where National Grid sets out its needs and selects the group of bids that best match those needs
 - iii) **Collaborative value stacking (versus rivalrous trading)** – providing both a multi-sided market, capable of multi-lateral trading enables another unique capability Electron has developed, the ability to perform collaborative trades. For example, a battery can provide both power (to the ESO) and a locational service (to the DSO) at the same time. Without coordinating these trades, grid operators are unable to share the cost of this action and DERs are unable to unlock their full market value. No single party can execute the trade, it will only happen if all parties collaborate.
- Providing the above functionality to co-ordinate (not control) flexibility trading, and taking into account the impact actions have at every level of the system supports a single (i.e. for all participants), open (i.e. trading and re-trading) platform that maximises self-scheduling
 - i) The platform enables a close to real time marketplace in both flexibility and ancillary service products ahead of gate closure (i.e. sitting in-between the futures or day ahead wholesale markets and real time system operator procured balancing services)
 - ii) SOs still retain the responsibility for residual balancing and physical delivery, as this is inherently linked to security of supply, but a platform situated ahead of gate closure mitigates, through financially settled products, the burgeoning residual balancing responsibility (and associated risk), forecasted to increase significantly over the coming years
- An example of a market a platform such as this can enable is the trading and re-allocation of curtailment agreements, a market Electron has been developing
- An independent platform means the incentives between the platform owner(s) and users are aligned, the marketplace(s) can legitimately uphold the principle of neutral market facilitation by avoiding the conflict of interest of being a market facilitator and an owner of network assets

Responses to Consultation Questions

Question 1: Do you agree with the case for change as set out in chapter 2? Please give reasons for your response, and include evidence to support this where possible.

The case for change in the methods of allocating and using electricity network capacity, and charging for the associated network usage is supported by the radical shift in the investment and behavioural decisions being made for both generation and consumption that has already occurred, and the expectation that this change will accelerate.

Distributed assets such as PV, EVs and heat pumps are making residential demand less homogenous. Smart meters are making it more visible and enabling Time of Use tariffs and

network charging that will incentivise behaviour in different ways. The impact of incentives can be seen in the behaviour of I&C consumers responding to Triads delivering upwards of 30 measured demand response events throughout the winter.

The increase in generation installed on the distribution network, or behind the meter, is another response to incentives which may not be maximising the system value of investment.

In order to optimise system costs, it is essential to address the misalignment of incentives that is both a result of, and exacerbating factor for this change. There are two conflicting aspects that will need to be carefully balanced: the role of markets for price discovery to address unintended consequences from changing these incentives, and ensuring fairness when future costs are a function of historic investment, the costs of which were shared.

Question 2: Do you agree with our proposal that access rights should be reviewed, with the aim to improve their definition and choice? Please provide reasons for your response and, where possible, evidence to support your views.

Improving the definition and choice for access rights enables consumers to match requirements and willingness to pay, but there may be a trade off against simplicity, clarity, and fairness for consumers. Both consumer and system values and needs will change over time, so the ability for consumers to change their contracted access rights is essential.

This may be centrally controlled, but can also be facilitated through neutral independent markets enabling access rights to be traded between parties based on rules defined by the DSO.

The review must also ensure that any differences do not cause distortions in price signals, including the interaction with wholesale markets, where increased rescheduling may result from shallower access rights.

Price signals also need to facilitate a response, and the review should consider the inelasticity of residential demand, any potential conflict with policy support for heat pumps and EVs, and that the fairness of granular local network charges.

The cost of monitoring and control should also influence any decision on access rights, where time-based restrictions may be better influenced through half-hourly pricing and settlement.

Question 5: Do you agree with our proposal that targeted areas of allocation of access should be reviewed? Please give any specific views on the areas below, together with reasons for your response. Where possible, please provide evidence to support your views:

- a) Improved queue management as the priority area for improving initial allocation of access, as outlined in paragraphs 3.41-3.44?**
- b) Not to consider the potential role of auctions for initial allocation of access as part of a review at this time, as discussed in paragraph 3.44?**
- c) To review the areas outlined in paragraphs 3.45-3.48 to support re-allocation of access?**

In response to Question 5c, we support the view that “better enabling the exchange of access rights between users will allow the network to be utilised most effectively by those parties that value it the most” and that this mechanism should be enabled through independent traded markets. It is important that such a mechanism considers existing and future contractual rights. Electron is developing a method for market based short term trading and reallocation of existing rights to reduce curtailment and maximise economic surplus, accommodating existing rights and maximising system benefit.

Question 6: Do you agree that a comprehensive review of forward-looking DUoS charging methodologies, as outlined in paragraphs 4.3-4.7, should be undertaken? Please provide reasons for your response and, where possible, evidence to support your position.

The smart meter roll-out will facilitate greater granularity for both time of use and capacity charges. The review should be informed by the impact of banded charging for CDCM, and P272 which brought more consumers into time of use DUoS charging. The review should consider whether these consumers did change their behaviour in response to more granular price signals.

Forward looking signals need to balance cost-reflectivity with fairness, and should incentivise appropriate behaviour to reduce system costs. Introducing more granular price signals is most appropriate where consumers are able to do so. Recent reports from the Energy Systems Catapult, Citizens’ Advice and Imperial College suggest that traditional domestic residential load is inelastic and inflexible.

Given that residual charges are also recovered through DUoS, this should be closely coordinated with the TCR SCR.